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ABSTRACT

Structural convergence theory seeks to determine whether as nations industrialize they move toward common ways of organizing, arranging, and defining the institutional subsystems in their social structures. A related concern is whether the characteristics of these institutional subsystems themselves promote or retard convergence. National educational systems act as institutional subsystems; their elements include the structures, personnel, and processes of education. Cross-national research on educational systems may focus on any combination of these elements. Shifts in the structural makeup of national educational systems can be determined through analysis of changes in several characteristics of those systems. The characteristics of the educational subsystem emphasized in this paper fall in the areas of demography, educational finance and cost structures, governance, and structural and normative features. A number of propositions drawn from the literature are presented, relating these characteristics to developments in other national subsystems. (Author/PGD)

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EDUCATIONAL SYSTEM DEVELOPMENT AND CONVERGENCE: A LITERATURE REVIEW AND PROPOSITIONAL INVENTORY

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August 1979

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EDUCATIONAL SYSTEM DEVELOPMENT AND CONVERGENCE:

A LITERATURE REVIEW AND PROPOSITIONAL INVENTORY

Abstract

Convergence theory provides a framework for posing questions and analyzing data on the nature of change in national societies and the institutional subsystems within. The causal dynamics of convergence theory are technological, ecological, legal and cultural changes. The application of the convergence model to one specific subsystem, education, is being conducted to assist in the identification and explanation of transformations in demographies, cost and finance patterns, patterns of control structures, and structural and normative characteristics of educational systems cross-nationally. A preliminary step in the fulfillment of this program is the organization of the relevant literature and the construction of a propositional inventory derived from such a review. This paper represents the outcome of the latter two tasks while specifying attributes of the educational realm which demonstrate potential for testing convergence theory.

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EDUCATIONAL SYSTEM DEVELOPMENT AND CONVERGENCE:
A LITERATURE REVIEW AND
PROPOSITIONAL INVENTORY

Structural convergence theory has as its core problematic the question of whether industrialized nations are moving towards a common social structure? Or, as nations industrialize do they move toward common ways of organizing, arranging, and defining the institutional subsystems in their social structure? A related question, but of secondary importance though crucial to the particular institutional subsystem which this paper focuses upon is, does the speed of convergence differ among the institutional realms of a society, i.e. are there characteristics within particular institutions which act to resist change, or conversely, which act to produce change in greater amounts than would be predicted?

The causal dynamics of structural convergence theory, i.e. the forces behind a particular type of social change, convergence, are:

1. Technological changes, especially in the modes of production and distribution, within which larger framework we assign particular importance to the new forms of work or employment.

2. Ecological changes, especially in where people live, within which frame we attach particular importance to the gathering of population in one or another ring of the great urban conglomerations.

3. Changes in the laws, especially those specifying the rights and obligations of individuals vis a vis the larger society.

4. Changes in cultural systems, especially in the attitudes and values with which society collectively confronts, each individual and each social grouping.

Inkeles has identified five elements of the social system upon which the above dynamic forces may act. This paper is concerned with a specific subsystem of one of these elements, education. The forces of change transform societies leading them to experience increasing differentiation and specialization, arising as a response to steady technological change and growing

human interconnectedness. This process of differentiation leads to the burgeoning of new institutions. One of these institutions is the modern educational system.

Education as an institutional subsystem of society is a matrix of organizations, practices, personnel, norms, and mychs, differentiated and "coordinated" for the specific purpose of "educating" people, predominantly youth, in qualities deemed appropriate by the society possessing the power and authority to legitimately define the form and set the objectives of the subsystem. In other words, any particular national educational system is a combination of structures, personnel, and processes of education. Cross-national research on educational systems may focus upon any combination or all of these to elucidate their properties and interrelationships.

The structures of education may be broken down into:

1. Schools as institutions
2. Systems of schools at given levels
3. Levels of schools (e.g. primary, secondary, tertiary, adult)
4. Text and curriculum generating organizations
5. Patterns of financing authority/responsibility and distribution
6. Patterns of administration and governance.

The personnel or actors in education may be divided into:

1. Pupils
2. Teachers
3. Administrators (Principals)
4. Service personnel
5. School boards, ministeries
6. Legislatures, etc.

Relevant properties for investigation of these "actors" may be their numbers location, origins and socio-economic/cultural characteristics.

Some examples of processes of education are:

1. Teaching/Learning
2. Modelling
3. Curriculum
4. Testing
5. Growth and decline in numbers and access
6. The emergence of problems and issues.

The processes of education focus on dynamic features of educational systems. Dynamic features are associated with normative and institutional elements and their transformations. The following propositional inventory, while differing in its framework from the analytical categories above, its organized around structural, personnel, and process facets of national school systems and their interrelationships.

The purpose of this paper is to summarize and present propositions found in the existing literature which represent many of the characteristics of national educational systems listed above which illustrate transformations occurring in this particular institutional subsystem. Within these propositions, the characteristics are systematically related to states of development or changes in other national and international attributes, many of these attributes being forces of convergence as developed in the theory. Some of these propositions have their roots in competing theories of educational development; some have been tested while others have not; some are contradictory; some are appropriate for all nations while others are appropriate for only nations who are located within specific states of national conditions or transformations; and some are specific to stable states and so have or can use cross-sectional analysis while others are specific to dynamic processes and so have or can use time-series analysis. The propositions and orienting statements to follow serve as a basis for organizing what has been done, and for our investigation, provides a framework for what can and is being done.

National educational systems manifest features which are invariant cross-nationally like "the school', "the classroom", and the three levels (primary, secondary, and tertiary), but at the same time manifest significant amounts of diversity which are related to the particular historical

features of each country. But many of these features which illustriate diversity are undergoing changes, changes or transformations which are in some instances similar in rates and directions and in some instances different when compared to other features within the same institutional subsystem, and when compared to other societal subsystems. Convergence theory offers an attempt to explain and specify the nature of these changes. National systems of education have "moved" and are "moving" over time toward the inclusion and manifestation of similar characteristics in their demographies, finance and cost structures and patterns, patterns of control, and structural and normative features.

I. EDUCATIONAL SYSTEM DEMOGRAPHY

The following sets of propositions focus upon the relationships between and among categories of educational actors or personnel and national attributes.

A. Economic Development & Enrollment Expansion

One of the most commonly made observations of educational system demography has been the relatively consistent and universal phenomenon of enrollment expansion in the post World War II era, as opposed to the more erratic and selective fluctuations of expansion of earlier times. The change in the character of enrollment expansion has often been attributed to economic growth. The relationship between enrollment expansion and economic growth has been the most frequently investigated area of the development of educational systems cross-nationally.

If nations are ranked cross-sectionally along a ladder of GNP per capita, there is a corresponding continuous increase in the percentages of the relevant age-groups enrolled in school as one moves up the ladder at $100 increments, though the greatest gain in the percentage of enrollment coverage occurs with the movement from the $100 GNP per capita level to the $200 level after which the percentage gain decreases as one moves up the ladder (Rostow 1978). Two competing models have been proposed to explain this relationship, the difference being which direction causation flows between enrollment expansion and economic growth. Three orienting hypotheses for enrollment expansion relative to economic development are the following:

1) As a country industrializes, labor markets organize around credentials and skills, so higher levels of educational attainment are likely to become prerequisite for access to an increasing number of occupations.
2) Membership in local and national status systems increasingly depends

on the level and kind of education attained, replacing arbitrary and unfair ascription.

3) Education is a useful investment for economic development because it is necessary for the maintenance of advanced technological structures and work organization. (Meyer et. al. 1979).

The argument that enrollment expansion leads to economic development assumes that the effect of education is more than the value added to the GNP by the expansion of education as an employing industry, and acts to counter the argument that expansion is simply a concomitant of economic growth (i.e. as a nation's per capita product increases it has more to devote to education). This frequently researched question has been rejuvenated by the conceptual reformulation of the enrollment question in terms of ratios of enrollments at the different levels, and rates of change.

Propositions

The greater the economic development of a nation, the greater the expansion of enrollments (Rubinson 1974).

Expanded primary, secondary, and tertiary educational systems increase economic development by socializing people to skills and values, serving as an allocating system, legitimating rational organization, investment, and technology (Meyer et al. 1976).

There is a higher relationship between income measured at time 1 and enrollments at time 2 than enrollments at time 1 and income at time 2 (Piper and Cole 1964).

At lower levels of economic development, over 5-10 year periods, economic development determines the development of national educational systems (enrollment-wise) more than educational systems determine economic development (Steadman 1971).

The relationship between enrollments and economic growth should be low because educational expansion is much less limited to fixed properties of society as is GNP, because the former involves the simple redefinition of people as teachers and pupils to a greater extent than the need for costly resources (Meyer et al. 1979).

More developed economies benefit especially from higher levels of education and their expansion which produce technical and managerial personnel for advanced industries, while less developed countries benefit more from the expansion of lower levels of education which helps to modernize their lower levels of the labor force, though there may be an interaction effect (Meyer et al. 1976.

The higher the level of economic development, the higher the enrollment rate (Pryor 1968).

The greater the industrialization of a nation, the greater the enrollments (Reisner 1922).

The ability of national income to predict educational enrollments has decreased in the post World War II period (Meyer 1971)

(Less Developed Countries) The expansion of educational effort in LDC's should be more difficult because of:
a) the smaller resource base, and
b) a faster frowing rate of population growth in the school-age population which requires a great effort to just maintain stable enrollment ratios (Meyer et al. 1976).

(Socialist & Capitalist Countries) Marxists would predict that total educational enrollments in socialist nations would be higher than in capitalist nations at similar stages of economic development (Pryor 1968).

B. Economic Development & Specific Types/Attributes of Enrollment Expansion

The three levels of schooling and the various forms within the levels possess distinctive characteristics and, on the other hand are interdependent. The different characteristic's affect the demography of each of the levels and the interconnections between these demographies produce the particular pyramidal form of the enrollments in a national educational system. The following set of propositions elaborate on the distinctive characteristics and interconnections among the levels and how these facets are hypothesized to mediate the relationship between economic development and enrollment expansion in general, producing differences in the timing of expansion among the levels and differences among the expansions of the levels cross-nationally. Whether the enrollment expansion within any particular nation has been a result of the increased access made available to the previous non-schooled, a change in the style of schooling offered (e.g. comprehensive schools), or any other reason, is secondary, for the outcome has been very similar, the

push toward universalization of attendance.

Propositions

The more economically developed a nation, the higher its primary enrollment ratio (Roth 1972).

Economic development has effects upon secondary enrollments only through primary enrollments, for they disappear when primary enrollments are controlled for (Rubinson 1974).

Economic development has larger or more direct effects on secondary enrollment expansion than does political modernization (Roth 1972).

The greater the economic development of a nation, the greater its expansion of tertiary enrollments (Roth 1972).

Higher development levels tend to lead to the greater concentration of investment in secondary and higher education expansion of enrollments (Meyer 1971).

The relative development of primary and secondary education may be mostly affected by economic development while the development of the higher educational system may be primarily affected by political modernization (Meyer 1971).

Educational expansion seems to have a consistently declining effect on economic development, the higher the level of education under consideration (Roth 1972).

The growth rate of the primary and secondary enrollment rates are not related to per capita income, economic system, or any demographic variable (Pryor 1968).

The greater the extension of the educational pyramid in wealthy countries results not only from the extension of its base, but also from the independent expansion of the secondary and higher education sectors (Meyer 1971).

Primary enrollments are more highly related with per capita income across countries than is adult literacy or post-primary attendance for there is alot more variability among both rich and poor nations for the latter two (Piper and Cole 1964).

The greater the economic development of a nation, the greater the tertiary-to-secondary enrollment ratio (Roth 1972).

(OECD Countries) While university enrollments have stagnated in some nations in recent years the number of students in non-university technical higher education has continued to appear that the technical schools were gaining in popularity at the expense of the university, in fact both types of education are interdependent. The rigorous standards of the universities actually compell the higher technical schools to absorb most of the expanding social demand for advanced instruction and marketable credentials;

consequently, the higher the rate of growth of enrollments of non-technical higher education, the higher the rate of growth of technical higher education (Geiger 1979).

The expansion of vocational education is more highly correlated with economic measures of development than is general education, and this relationship increases to a point in economic development and then decreases there after (Blaug 1970).

The lagged consequences of educational investment, directed toward enrollment expansion, for later economic growth differ as to the level and combination of investment within and across the levels of the educational system (primary, secondary, and tertiary).

C. Economic Dependence & Enrollment Expansion

The greater the economic dependence of a nation on more developed nations, the greater the expansion of enrollments (Rubinson 1974).

Because dependent societies are less likely to adopt modern institutions because they lack the control of sufficient resources and because national and colonial elites in peripheral status countries derive their power from their links with metropolitan centers and not their success in integrating their populations into a national culture, the rate of enrollment expansion in nations characterized by higher levels of dependency will be slower (Meyer, et. al., 1979).

D. Resource Availability & Enrollment Expansion As An Organizational Response

Hannan and Nielsen have contended that schooling is an organized activity and consequently, that the expansion of schooling represents an organizational achievement. Schooling expansion necessitates the presence of a demand for additional schooling and an organizational capacity to incorporate more students. The demand for schooling is structured due to the sequential nature of the levels, and this sequential structure limits the size of the pool of candidates for higher levels. Schools, as organizations, require resources for the time-dependent process of mobilizing for the activity of expansion. The speed of adjustment schools to a new level of demand/affordability is likely to depend on the structure of the organization and characteristics of the environment, and on the magnitude of the required change.

Two structural characteristics of schools as organizations can be

discerned and shown to have substantive relevance to this perspective. These characteristics are the degree of complexity and the cost per unit. These organizational properties increase as one moves from the primary, secondary, to tertiary levels of the school system within a nation. On the basis of these characteristics the levels of the educational system can be conceptualized as three sets of organizations who compete with each other and other organizations in the national environment, and because of these differences in their properties, they react differently to levels of and changes in demand and resource availability.

A high degree of complexity and a high cost per unit lower the speed of adjustment of organizations and therefore increase the structural inertia. A highly complex and differentiated structure leads an organization to compete more with others to mobilize resources in short supply. A high cost per unit limits the rate of organizational expansion, so a low-cost organization will expand more than a high-cost one when they are competing for the same resources. Furthermore, by assuming that the protection requirements of organizations are some increasing function of the complexity and cost of the core technology; the more complex the core technology of an organization, and the more efforts and resources invested in each unit of input, the more selective the boundary-maintaining components in charge of input. In the educational context, such boundary-maintaining activities manifest themselves in: admission committees, entrance examinations, and the massive elimination of actors after a short trial period within the organization (Nielsen and Hannan 1977).

Propositions

The wealthier a country, the larger the enrollments it can afford (Nielsen and Hannan 1977).

When few resources are available in the national environment, the major constraints on organizational growth (i.e. enrollment expansion) are resource constraints, so the resource effect is larger in poor nations but responsiveness to resource level changes is greater in rich nations (Nielsen and Hannan 1977).

The rate of enrollment expansion will decrease as one moves from primary, secondary, to tertiary levels of the system because of the higher complexity and per unit costs as one moves up the levels (Nielsen and Hannan 1977).

The degree and rate of enrollment expansion of the secondary and especially the tertiary levels should be less dependent on the size and changes in the available pool of candidates (Nielsen and Hannan 1977).

Resource levels in the national environment are likely to improve the capability of the three organizational levels of the national education system to adjust quickly to their respective carrying capacities: more resources in the system mean less competition between organizations for essential resources. Consequently, for each level of education, the inertia should be lower in rich relative to poor nations (Nielsen and Hannan 1977).

In an abundant environment, input fluctuations are likely to constitute a lesser threat for the core technology of an organization since a temporary disequilibrium is more easily corrected by reallocation of resources. Since the effect of the cohort of qualified candidates and organizational responsiveness increases with the wealth of the nation within which the educational system is embedded, the sequential interdependence within the three levels of the educational system increases with wealth (Nielsen and Hannan 1977).

E. Political Attributes & Enrollment Expansion

National political attributes have frequently been examined for their relationship to the expansion of enrollments in the nation's educational system. The national political attributes examined may be described as the theory or image of the polity in the nation and a set of structural characteristics of the political system, and their role relative to expansion, like that of economic attributes, has been characterized by reciprocal eausation. Three orienting hypotheses for enrollment expansion relative to political attributes are the following:

1) Polities who need a high level of citizen participation (which requires political efficacy and commitment to conceptions of public good) expand mass educational systems to create participatory citizens.
2) Education expands in response to accelerated demand, a demand made since modern representative polities are more tolerant of competing status groups and are more likely to respond to groups' efforts to penetrate such modern institutions as education.
3) Nation-states have engaged in long processes of nation and state building which involve elaborate efforts to extend citizenship to their populations and crucial to this extension is mass education, which creates and maintains the common national culture and its myths (nation-building), and turns each citizen into an agent of the collectivity (state-building) (Meyer et. al. 1979).

Propositions

The greater the political modernization of the nation, the greater the expansion of enrollments (Rubinson 1974).

The higher the political modernization of a country, the higher the enrollment ratios at the various levels, even if GNP is held constant (Meyer 1971).

The greater the degree of democratization of a regime, the greater the educational expansion (Rubinson 1974).

The stronger the democratic elements in a country, the greater the enrollments (Reisner 1922).

The more democratic a nation, the higher the enrollment ratios at the various levels of the educational system.

Given that political modernization affects the development of the educational pyramid at its upper levels, what are the ways that different kinds of modernization may operate. Two aspects of the political system style are its representational character (or

representation of relatively broad groups of people in the forms and rhetoric of representative democracy) and mobilizational character (the degree to which elites have mobilized or organized the system around compelling problems of national urgency), and so the higher the presence of these in a nation, the higher the enrollment ratios, especially at the higher level of the educational system when GNP is held constant (Meyer 1971).

The greater the degree of the penetration of constituent interests into the state apparatus, the greater should the educational system expand (Robinson 1974).

If the process of state domination creates widespread political statuses, and if education is a mechanism allocating social statuses then educational enrollments will expand with the expansion of the state (Rubinson 1974).

At higher levels of state authority and power, a country is more likely to:
1) Extend mass schooling to all, and
2) Nationally incorporate the structure of education by locating educational institutions within a network of national rules and resources (Ramirez and Rubinson 1979).

The higher the nation's extractive power in the government (i.e. expenditures of the central government as a percentage of the GNP), the higher the enrollment ratios when GNP is controlled for since expanded and lengthened educational enrollment patterns would seem to depend on relatively strong and integrated political institutions and the financial base these would provide (Meyer 1971).

The less sectionalism and the higher the governmental stability in a nation, the higher the enrollment ratios when GNP is held constant (Meyer 1971).

The legitimacy crises created by the extension of citizenship lead to the extension of education to more groups in the population (to legitimate the inequalities through its ideology) (Rubinson 1974).

The higher the "westernization" and degree of existence of public bureaucracies in the nation, the higher the enrollment ratios when GNP is held constant (Meyer 1971).

F. Societal Corporateness & Enrollment Expansion

The less corporate a society, the greater the expansion of higher education with the level of the national incorporation of education held constant (Ramirez 1974).

The more coporate a nation-state is, the more likely it is to increase their public enrollments relative to their total primary enrollments (Ramirez 1974).

The greater the corporateness of a society, the greater the expansion of the non-university sector of higher education relative to the university sector (Ramirez 1974).

The more corporate a society, the greater the expansion of primary education, with the level of the national incorporation of education held constant (Ramirez 1974).

G. The National Incorporation of Education & Enrollment Expansion

The national political incorporation of education refers to the extent to which the national state regulates education. This regulation takes the form of rules concerning the schools' charter, employees' certification, curriculum organization and distribution, admissions, and the location of the national educational system within a web of national resources (Ramirez and Rubinson 1979).

Propositions

The more primary education is nationally incorporated, the greater the expansion of primary education (Ramirez 1974).

The less higher education is nationally incorporated, the greater the expansion of higher education (Ramirez 1974).

The less corporate a society, the greater the expansion of higher education with the level of the national incorporation of education held constant (Ramirez 1974).

Educational systems undergo expansion the less they are nationally incorporated, and the more they are directly penetrated by interest groups (Ben-David and Zlockzower 1962).

While it may be correct to argue that the national incorporation of higher education is a consequence of corporate construction within the nation, it may be an error to assume that higher educational incorporation has an invariant meaning and invariant consequences across national societies. Perhaps educational incorporation involves elite status conferral, which would tend to restrict expansion, only in more corporate societies. If this is true, then higher levels of higher educational incorporation should produce greater expansion in less corporate societies (Ramirez 1974).

H. Political Attributes & Specific Types/Attributes of Enrollment Expansion

The greater the support for primary education form powerful groups in the nation, the higher the primary enrollments will tend to be (Warren 1973).

The more power is concentrated in a branch of government, the greater the expansion of its primary education (Ramirez 1974).

The fewer the number of political parties, the greater the expansion of its primary education, with the level of economic development controlled for (Ramirez 1974).

The higher the degree of political modernization in a nation, the higher the primary enrollment ratio (Roth 1972).

If one controls for the previous level of secondary enrollments and the previous level of economic development, nations with higher levels of state formation expand their secondary educational systems at a greater rate than those with lower levels of state formation (Rubinson 1974).

The more politically modernized a nation (C.E. Black's index,) the greater the expansion of secondary enrollments (Roth 1972).

The relative development of primary and secondary education may be mostly affected by economic development while the development of the higher educational system may be primarlily affected by political modernization (Meyer 1971).

The less power is concentrated in a branch of government the greater the expansion of its higher education (Ramirez 1974).

The greater the number of political parties the greater the expansion of its higher education (Ramirez 1974).

The expansion of higher education is more highly related to high degrees of political modernization and the presence of high degrees of bureaucratic and meritocratic structures than it is to GNP as are primary and secondary expansion (Meyer 1971).

The greater the political modernization of a nation and the length of its independence, the greater the tertiary-to-secondary enrollment ratio (Roth 1972).

I, Peripheral Status Nations and Their Attainment of Independence & Enrollment Expansion

Because dependent societies are less likely to adopt modern institutions because they lack the control of sufficient resources and since national and colonial elites in peripheral status countries derive their power from their links with metropolitan centers and not their links with metropolitan centers and not their success in integrating their populations into a national culture, the rate of enrollment expansion in these nations is slower (Meyer et. al. 1979)

The longer a country has been independent, the greater the expansion of its secondary enrollments and the greater the secondary-to primary ratio (Roth 1972).

The greater the political modernization of a nation and the length

of its independence, the greater its expansion of tertiary enrollments (Roth 1972).

Countries with a recent colonial past tend to have lower scores on enrollment ratios than other countries (i.e. those who have been independent longer) of comparable levels of economic development and as a consequence of major elements of recent colonial countries, the political elites being composed of foreigners or locals trained by educational institutions in colonizing countries, recent colonies will show a particularly low level of development in the higher educational system (Meyer 1971).

J. National Demographic Attributes & Enrollment Expansion

Demographic attributes of a nation like the age structure, population growth rates of the various age-groups, level of educational attainment of the population as a whole, and the distribution of the population are critical for explaining the level and rate of expansion of enrollments within a nation in their own right and in terms of their interaction with other national attributes. The importance of demographic attributes have led many investigators to refine their views of enrollment efforts from absolute figures to percentage figures of age-adjusted enrollment rates, and to notice the importance of the ecology of schooling, or the distribution of enrollments across subunits within a nation and what implications this has for access to schooling.

Propositions

The higher a nation's urbanization and population density, and the lower a nation's population growth rate, the higher the enrollment ratios when controlling for GNP (Meyer 1971).

The increase in social demands for education since World War II are related to:
1) An increase in parent aspirations,
2) An increase in the public policy stress on education,
3) The population explosion, and
4) The nature of the feedback of the social demand for education upon itself (Coombs 1969).

The higher the rate of population growth in a nation, the lower the rate of expansion of enrollment ratios because of the effort required just to stay stable at any given ratio (Stone 1976).

The higher the urbanization of a nation or its subnational units

the higher the enrollment ratios since it would be easier to provide education if children were assembled in towns rather than if they are scattered over the countryside (Stone 1976).

The higher the dependency ratio (i.e. the number of individuals in the school-age group relative to the number actively involved economically in all age-groups) the greater the financial burden any enrollment increases are, so the slower the expansion rate of enrollments and the lower the enrollment ratio (Stone 1976).

The enrollment ratios will be higher when the urbanization and communicability in a nation are higher (Farrell 1968).

(Less Developed Countries) The expansion of educational effort in LDC's should be more difficult because of:
1) A smaller resource base, and
2) A faster growing rate of population growth in school-age kids which requires a greater effort just to maintain stable enrollment ratios.

(OECD Countries) The longer the stabilization period or the greater the decline in the student age-group population, the greater the loss of students by educational institutions with localized recruitment areas (Geiger 1979).

K. Socio-cultural Attributes of Nations & Enrollment Expansion

Nations represent social and cultural milieus within which the task of educational system construction are undertaken. They are rich in webs of integrating, competing, and conflicting normative structures and value-orientations on both the individual and collective level, institutions, and organizations, all being both generated from within and diffused and imposed from external sources. Two orienting hypotheses which illustrate this relationship are the following:

1) Modern institutional expansion and value patterns (e.g. institutionalization of the dignity of the individual, development of participatory citizenship, expansion of bureaucratic organizations, and the creation of modern lifestyles) create individual and aggregate demands for educational expansion.
2) Curricula and structural arrangements of schools meet demands for the creation of new persons with skills and universalistically governed rules of orientations in bureaucratic organizations and lifestyles in order to participate in them and legitimate them, and these new people press for more education (Meyer et al. 1979).

Propositions

The greater the westernization of the nation, the greater the expansion of enrollments (Rubinson 1974).

The greater the nationalism in a country, the greater the enrollments (Reisner 1922).

The greater the ethnic heterogeneity and fractionalization in a nation, the lower or slower the expansion of enrollments because of their resistance to state-formation mobilization (Rubinson 1974).

Ethnic fractionalization may have two opposing time dependent effects on educational expansion strategies, such that initially it may hinder it only to later favor it (inequalities vs. integration) (Cowan 1965).

The higher the degree of religious, racial, and linguistic homogeneity, the higher the enrollment ratios in a nation when GNP is held constant (Meyer 1971).

The higher a nation's commitment to egalitarian principles the higher a country's educational effort (Blaug 1970).

The timing of selection in educational systems affects the shape (i.e. the size of the relative levels in ratios) of the educational enrollment pyramid. To use R. Turner's distinction of contest and sponsored mobility as an example to illustrate the imagery of one particular cultural myth which should penetrate other institutional realms, then the more a nation's imagery resembles contest mobility, the later the selection timing and consequently, the higher should be the primary enrollment ratio, the secondary-to-primary ratio, and the tertiary-to-secondary ratio (Meyer 1971).

The greater the incorporation of women into formal work arrangements, the higher the enrollment ratios in a nation.

The earlier the selection timing in the educational system, the stronger the negative relationships between the primary enrollment ratio, the secondary-to-primary ratio, and the tertiary-to secondary ratio (Meyer 1971).

The more prevasive the climate of elitism in a nation in terms of a rigid stratification system, limited upward mobility, and the restriction of the higher education levels to the upper classes, the more narrow the base of the educational pyramid (Coleman 1965).

The higher the elitism in a nation, the more narrow the top of the educational pyramid because it is limited to upper class individual even though there may be substantial equality of educational opportunity and upward mobility for all strata (Coleman 1965).

L. World Culture/World Economic System & Enrollment Expansion

Social scientists have increasingly begun to discover the importance

of observing how the relationships between nations affect the institutional and organizational arrangements within any particular nation. Though there exists several competing variants, the general perspective is the world-system paradigm. This world-system whether viewed as a system of values and meanings, polity, and/or economic exchange relations has a set of characteristics which are necessary to identify to understand the transformations internal to a nation, one of these transformations being enrollment expansion.

Propositions

The greater the intensity of the capitalist world economy, the greater the growth of enrollments within nations because the world-system places greater competitive pressures on states, economic organizations, and other subunits that compel universal devotion to these goal and means (Meyer et. al. 1979).

Economic performance within a nation has decreased in significance in the post World War II era as a predictor of enrollment expansion because expansion reflects convergence in the meaning and value of development on a world level which educational systems within nations conform to (Meyer 1971).

M. Internal Educational System Characteristics & Enrollment Expansion

Characteristics of the educational system itself may affect that nation's system's ability to expand at any given time. An example is that because the educational career of an individual takes the form of a rigid processing with a fixed sequence of steps, there exist a standard or universal set of stages through which nations pass in the development of their educational systems with regard to early primary completion ratios, primary level completion ratios, secondary completion ratios, and tertiary level completion ratios over time due to demography and the structural linkages between the levels (Laska 1964).

Propositions

Increased segmentation in an educational system, i.e. increases in the number of one structural element (e.g. primary schools), produces

a capacity for the educational system to enroll more students (Farrell 1968).

The greater the structural differentiation in a national educational system, i.e. increase in the number of structural elements or organizational components, the greater the expansion of enrollments though the capacity to expand which it produces should be less than that of segmentation and should have a slower impact on the rate of change in enrollments (Farrell 1968).

The higher the structural differentiation of the educational system, the higher the enrollment expansion even with the population dynamics of the nation controlled for (Farrell 1968).

The greater the structural differentiation of a national higher educational system the greater the variation in access points within and consequently the greater the enrollment expansion because the characteristic of variable access is better matched to a population possessing variable access qualifications.

The more developed an educational system, the higher the transition rates between levels, the survival rates between levels, and the admission rates within levels of a nation's educational system.

The form of the educational planning structure within a nation, for example using Daniel Inbar's typology of planning structures: Centripetal, Integral, and Centrifugal; will affect the type and rate of enrollment expansion.

N. Strategies & Enrollment Expansion

National systems of higher education have used different strategies respond to the growth of enrollments. Belgium, as many countries have, faced the problem during the 1960's of how to accommodate the burgeoning university population. They essentially faced three competing alternatives:

1) The enlargement of existing institutions,
2) The geographical dispersion of institutions under the auspices of the existing universities, and
3) Geographical dispersion through the creation of entirely new universities (Geiger 1979).

Propositions

Strategies of enrollment changes of newly independent nations will differ on the basis of the strategies of the earlier metropolitan country which they will resemble, at least in the short run (Cowan 1965).

The existence of numerous clausus on enrollments or the emergence of them, a particular type of enrollment strategy, in some European countries is related to whether enrollments are controlled by social demand or private demand in the country (Premfors 1979).

O. National Economic Attributes & Student-Teacher Ratios

The student-teacher ratio represents another demographic characteristic of educational systems. The significance of it lies in its rough equivalence to class size and the latter's association with the quality of instruction.

Propositions

The growth rates of the pupil-teacher ratio are not significantly related to either the level of per capita income, the change in income, or the type of economic system (Pryor 1968).

A common contention is that state economic environments are seen as having direct effects upon state policy outputs and properties of state political systems. This leads to the contention that economic development shapes both political system and policy outcomes, but other environmental characteristics especially cultural characteristics can be independent and antecedent. One of these cultural factors may be the degree of religious fundamentalism, and this should be related to the pupil-teacher ratio (Hutcheson and Taylor 1973).

As a nation develops economically, the pupil-teacher ratio will decline at all three levels of the system.

The dispersion of the pupil-teacher ratios, at all three levels, for countries of similar levels of economic development, is less the higher the level of economic development (Convergence Hypothesis).

P. Internal Educational System Characteristics & Student-Teacher Ratios

The lower the student-teacher ratio, the higher the per capita expenditure on education (Sheehan 1970).

The higher the structural differentiation of an educational system, the lower the student-teacher ratio at the primary and secondary levels (Farrell 1968).

Q. Enrollment Expansion & Wastage Rates

Wastage rates represent another set of demographic characteristics of educational systems. Wastage rates usually cover events in the careers of students who were initially enrolled such as dropping-out, repeating a grade, and being forced by educators. The degree of wastage of these events is often associated with the amount loss through investing in the

individual's education which seems to increase the closer the student comes to finishing a level before exiting from the flow of their cohorts.

Propositions

The greater the expansion of enrollments, the higher the drop-out rates (as a percent of those enrolled). This is believed to be true because the act of including more students who are less likely to continue comes into play when expansion occurs, and because quick and large expansions may be spreading "thin" the resources thus decreasing a "quality" resource like student-teacher interaction time (Coombs 1970).

Wastage rates are higher in developing than developed countries because of the influence of enrollment expansion shocks and scarity of resources for teacher-training in the developing countries (Simmons 1974).

The higher the economic development of a nation, the lower the repetition rates in the nation's educational system (UNESCO 1972).

R. National Economic/Political Development & the Extension of Enrolled Status to Marginal Groups

As nations develop they extend formal schooling to more and more borderline groups in the nation like adults, pre-school aged children, and the handicapped. A politically incorporated and expanded educational system also legitimates several kinds of crises created by the extension of formal political equality:

1) The crisis created by the unequal participation of economic groups in the political system,
2) The crisis created by the unequal participation of ethnic and linguistic groups in the political system, and
3) The crisis created by the inequalities in social relations within constituent bodies (Rubinson 1974).

The legitimation is accomplished by the extension of the enrolled status, which translates into citizenship status later, to groups marginal to the decision-centers in the nation. The enrolled status translates into citizenship status because it provides the rights and some resources for participation in that political system (Rubinson 1974).

Propositions

The higher the strength of the state, the greater the degree to

which peripheral status groups in a nation are transformed into regular members of the society via educational enrollment (Ramirez and Rubinson 1979).

The more economically developed a nation is, the more it increases the access of the formal educational system to adults, the handicapped, and the pre-school children.

The type of economy, whether capitalist or socialist, has little if any effect on the rate of university attendance according to the percentage distribution of students by parental status with the distribution of families by status (Anderson 1965).

S. National Economic Attributes & Higher Education Degree Receivers

Income per capita and economic system type make no difference for the number of students receiving degrees from institutions of higher learning per thousand, for nations at the same level of development (Pryor 1968).

T. Relations Between Educational Actors & States of Enrollment Growth and Decline

The carrying capacity of the educational system within a nation for any personnel component is related to:

1) Exogeneous environmental variations (e.g. Enrollments, Finances),
2) Internal competitive relations (i.e. Organizational politics), and
3) History (e.g. inertial social, political, and cultural characteristics of the local environment) (Hannan and Freeman 1979).

Some of the personnel involved are teachers, administrators, public service employees, and classified employees. Hannan and Freeman have examined the changes in the presence of these personnel components in schools experiencing growth and decline in their enrollments as well as the intensity and patterns of competitive interactions among the personnel which may distinguish the states of growth and decline in enrollments. Such substantive interests seem to be especially relevant to studying the demography of educational systems since several western European nations have recently experienced decline in enrollments, and this substantive perspective needs to be examined cross-nationally.

Propositions

The supportive personnel of an educational system, public service and classified personnel, resist decline while teachers don't, so that ratios of supportive staff to teachers will be higher at the same level of enrollments in the state of decline (Hannan and Freeman 1979).

Expanding enrollments increase the personnel components of educational system, but in the state of decline, organizational politics, an aspect which would vary cross-nationally because of national differences in the degree of politicization of educational organizations, would lead to differences, such that declining districts or nations would maintain higher levels of non-teaching personnel (Hannan and Freeman 1979).

Class-size changes between states of growth and decline such that it decreases in decline but remains stable in the state of growth, but the level of economic development and the degree of enrollment expansion would produce this stability when the former is high and the latter is relatively low (Hannan and Freeman 1979).

II. COST AND FINANCE PATTERNS IN EDUCATIONAL SYSTEMS

This section of the propositional inventory focuses upon hypotheses relating patterns of expenditures on education and structural arrangements of finance in education to national attributes, attributes of the educational system itself, and to each other. Educational expenditures or cost patterns have been represented by a multitude of indictors some of which are absolute amount, expenditure as a percentage of some measure of income in the nation whether on an aggregate or per capita basis, educational expenditures as a percentage of the government budget, educational expenditures as a percentage of the government budget, and expenditure per student. All of these measures have been used at the three levels of the system on an individual basis too.

Before presenting the propositions it is necessary to review several factors which affect expenditures and finance arrangements. First, the strongest determinates of this year's funding level of the educational system is last year's funds and student population. The importance of these non-coercive factors put in perspective the limited effects of both coercive force and political capriciousness, and if control is exercised, it is done at the margins. Second, the levels of the educational system differ in their unit cost, or the amount of resources needed to process one student, and this difference is such that the cost increases with the level of the system, though nations differ as to how much these differences between the levels are. Third, the major cost of educational systems is labor. Fourth, teacher renumeration increases as one moves up the educational levels.

Cost and finance patterns are also interesting phenomena to study because when viewed one way they show a great deal of similarity across nations even though large amounts of variability may be underneath.

An example of this can be found among OECD nations where they cluster around similar percentages of their GNP going toward education but vary significantly with regard to the percentage distribution of these funds among the three levels of the system. As a nation expands the upper levels of the system, the distribution of expenditures shifts in some amount significantly to the higher levels because of their higher unit costs, and increases the total educational expenditure.

A. National Economic Attributes & Educational Expenditures

The following set of propositions examine the relationship between indicators of educational expenditures and economic characteristics of nations. An orienting finding is that if nations are ranked cross-sectionally along a ladder of GNP per capita, for each $100 increase in the mean GNP per capita there is an average of a .15 percent increase in the percentage of the GNP devoted to educational expenditure in nations around the world (Rostow 1978). Some of the following propositions illustrate elaborations and modifications of this basic statement.

Propositions

The wealthier a country, the more likely it is to spend a greater proportion of their wealth on education than poor countries (Garms 1967).

Because of the increasing technological complexity of the world economy, educational expenditures respond differently to per capita income over time and over space at a single point in time. More specifically one can predict that educational expenditures have a higher ratio income-elasticity in the time-series than in the cross-sectional (Pryor 1968).

The income elasticity of educational expenditures is in excess of unity (Sacks 1972).

The rate of increase of educational expenditures is greater than the rate of increase of the GNP (Rostow 1978).

The ability of density, urbanization, and per capita income to predict state per capita expenditures on education has decreased (Miner 1963).

The income-elasiticity of educational expenditures is greater for local units than for national units (Sacks 1972).

Should the importance of private education increase with a rising per capita income:
1) As a community becomes wealthier the individual citizens are more able to afford private education and will more strongly desire private education which can be individually tailored to the specific needs of the pupils, and
2) On the other hand, the average unit cost of education rise over time vis-a-vis other goods and services as per capita income rises and the schooling process for the average pupil becomes longer (Pryor 1968).

The higher the GNP per capita and population demands for government services (as measured by the level of urbanization, literacy, and media exposure), the higher the non-distributive policy outcome in the nation (where non-distributive policy equals per capita educational expenditure) (J. Clark 1976).

The greater a nation's resources (GNP per capita), the greater the per capita spending for education (J. Clark 1976).

For nations of similar levels of economic development, there has been convergence of their educational expenditures as a percentage of the GNP over time.

Marxists would predict that total educational expenditures in socialist nations would be higher than in capitalist nations at a similar stage of development (Pryor 1968).

(Developing Nations) The analysis of the relationships between expenditures, their share in GNP and educational budgets, enrollment rates, and unit costs (total and at levels) leads to the conclusion that
1) Geographical region is the most crucial variable for understanding the relationships among these factors, as opposed to income,
2) The portion of GNP a nation dedicates to education, and how funds are distributed among different levels of education does not depend on the economic development of the country (income per capita) (Zymelman 1976).

(Developing Countries vs. OECD Countries) When comparing the two:
1) The typical country of each of these groups spends the same proportion of GNP on elementary education, and the unit cost in terms of GNP per capita is similar, although the enrollment rate is almost half that of OECD countries; then low enrollment rate results from the high proportion of school-age kids in the population, and
2) The low enrollment rates in secondary and tertiary education of developing relative to OECD are the consequence of high unit costs in relation to GNP per capita (Zymelman 1976).

(American cities) Expenditures per student on education should be positively related to:

1) The ability to pay,
2) The demand for education, and
3) The access of the public to the political decision-making process of determining the expenditures (Garms 1967).

B. National Economic Attributes & Other Types of Educational Costs

Regardless of the nation's economic system or state of development, there are additional non-monetary costs of schooling which include privileges accorded educational institutions and the production and income foregone by pupils not participating in the labor force (Pryor 1968). Also, the educational expenditures normally examined may broken down so as to observe the specific components. One of these components is teacher costs.

Propositions

The higher the national income per capita, the higher the teaching costs and other personnel costs of the educational system (Sheehan 1971).

The higher the level of economic development, the lower the ratio of school teachers' salaries to per capita income becomes at all levels of the educational system (Coombs 1969).

Nations with higher levels of economic development generally have higher renumeration of teachers because as an approximation of wages of industrial workers and teachers, they move parallel with each other (Pryor 1968).

C. Educational Expenditures & Other Governmental Expenditures

Convergence theory contends that educational expansion and expenditures should be related to a larger societal pattern of increased health care and social welfare institutions. If this is true then should be definite relationships between the expenditures in all three institutional subsystems.

Propositions

The greater the spending on education, or change in the spending on education, the greater the spending on health care and welfare or change in these.

The greater the spending on education, or change in the spending

on education, the less the spending on defense or change in this spending.

Public spending on education is increasing faster than total public spending cross-nationally (Edding and Berstecher 1969).

The providing of educational services, i.e. allocating resources to it uses up scarce labor, capital, and land and precludes their use for other purposes. Such that there should be a negative relationship between educational expenditures and other non-specified expenditures (Miner 1963).

Education, especially at higher levels where it remains meritocratic and vocational is special: it is negatively related to welfare effort. To develop a mass higher educational system is to neglect the rest of the welfare state, to become a welfare state leader is to become a higher education laggard. In contrast, a nation's expansion of higher education is chiefly a contribution to equality of opportunity enhanced mobility for those judged to be potentially able or skilled, it is only a peripheral contribution to absolute equality (Wilensky 1976).

The size of educational expenditures is affected by:
1) The prevailing interest rates,
2) The relative rates of return to education vis-a-vis other investments, and
3) The degree of substitution between private and public expenditures for this service (Pryor 1968).

The increase in educational expenditures over time as a percentage of the nation's GNP can be explained by:
1) The lowering of the pupil-teacher ratio, and
2) The increasing volume of non-teaching activities (Machlup 1976).

D. National Demographic Attributes & Educational Expenditures

The greater the level of population demands (urbanization, literacy, and media exposure), the greater the level of per capita spending for education (J. Clark 1976),

The larger the relative number of children in the population, the larger the educational expenditures (Pryor 1968).

The ability of density, urbanization, and per capita income to predict state per capita expenditures on education has decreased over time (Miner 1963).

(Sample of American cities) Expenditures per student on education should be positively related to:
1) The demand for education (Garms 1967).

E. Teacher and Other educational System Characteristics & Educational Expenditures

Labor costs have been stated to be the major contribution to educational expenditures, but this contribution can vary cross-nationally depending upon characteristics of teachers and the relative position of teachers to other occupations. The IEA study of 1969 data on teachers' pay found that:

1) Primary teachers' pay as a percent of the pay of minor white-collar workers' pay ranged from 75% to 175%,
2) Secondary teachers' pay as a percent of major professionals' pay ranged from 25% to 100%, and
3) The average of primary and secondary teachers' pay as a percent of the average earnings in manufacturing ranged from 75% to 225% (Passow, et. al., 1976).

Obviously there is a significant amount of variability here which needs to be explained and which can exert great impacts on educational expenditures. But other types of costs are of significance also. Even though nations spend similar relative amounts of their GNP and government budget on education, this does not mean they are providing the same quantity or quality of services (Sharkansky 1969).

Propositions

Over time, the average costs of educating a child should rise because:
1) The average duration of schooling is rising, and
2) If teacher's wages keep pace with wages in other sectors of the economy, then the monetary costs of a pupil per year of schooling rises because of the differential productivity (Pryor 1968).

Variations in the quality and qualifications of teachers (i.e. their definition in the country) will affect the proportion of the public expenditure spent on education (Sheehan 1970).

The higher the level of education and the more developed the educational system in a nation, the higher the contribution made by non-teaching activities to their respective expenditures.

The greater the multilateralization of external educational assistance from nations who have become newly independent, multilateralization is an event which is a result of a conscious shift from single-dependency relationship with the former metropolitan country to a multiple-dependency relationship with countries with different educational traditions, the greater the expansion of their educational system and the greater their educational expenditures (Coleman 1965).

F. Structural Features of Educational System & Educational Expenditures

One structural feature of educational systems has already been considered in its relationship to educational expenditure, that of the level or grade. The unit costs of providing schooling increases as one moves from primary to secondary, and then again to the tertiary level. The cost differentials between the levels vary cross-nationally, so would be an interesting phenomenon to study in itself, but also because of these cost differentials, educational expenditures will differ cross-nationally according to how well countries expand each level in terms of both absolute and relative amounts and distribution of expenditures across levels. Another feature which affects educational expenditures is the degree of structural differentiation in the educational system in the nation because this involves the proliferation of agencies organized around the provision of special services or administrative tasks, though one of the following propositions disagrees with this contention.

Propositions

Structural differentiation of educational systems is positively related to the percentage of the public education levels funds that are allocated to secondary and higher education levels (Farrell 1968).

Structural differentiation of national systems of education is independent of educational expenditures, and cost per student (Farrell 1968).

G. National Economic/Educational Attributes & Types of Educational Costs

Nations may not only differ in educational expenditures, but also in the types of costs they incur. Nations may differ in how much they spend on education relative to their GNP and government budget, but they also may differ in what "areas", besides the levels of the system, the money is spent. Some of these possible areas are subject matter, administration, teacher training, auxillary services like health, extra curricula activities, food and trans-

portation. Expenditures in these areas may not only affect the cost of education in a nation but may be related to the level of economic development of the nation.

Pryor contends that the cost structure of educational systems in nations may be divided into the following framework:

1) Resource-use Costs: The expenditures on teachers, maintenance of school buildings, transportation of students, teaching material and supplies, and books and school supplies for students,
2) Resource-loss Costs: The opportunity costs of the resources in the educational system - the income foregone by students while attending school and the interest and profits foregone by investing the capital into school buildings and equipment rather than for some other purpose,
3) Resource-transfer costs: Transfer payments to pupils to enable them to attend school by supplying them with some of the income they have foregone by not participating in the labor-force (Pryor 1968).

The following are a set of propositions based upon the above framework.

Propositions

Resource-transfer costs will be higher in centralized economy nations (Pryor 1968).

Resource-loss costs will be borne more by the student and his/her family in nations with a market-oriented economy (Pryor 1968).

Resource-use costs will be higher in nations of higher economic development (Pryor 1968).

The more equal the levels of the demographic pyramid of educational enrollments the lower the resource-loss costs (Pryor 1968).

H. National Political Attributes & Educational Expenditures

The more elitist the leadership in a nation, the greater the expenditure for elite-level (i.e. tertiary or college) education (J. Clark 1976).

The more competitive the party system, the less the expenditure for elite-level (i.e. college) education (J. Clark 1976).

Distributive policy, the percent of the educational budget spent for higher education, will show primary associations with recruitment elitism (Positive relationship) and party competition (negative relationship) (J. Clark 1976).

The political culture (i.e. the particular pattern of orientation to political action in which each political system is embedded and is found among the politicans and general public and it may affect their understanding of what politics is and what can be expected from government, influence the ways in which they practice politics and formulate policy) is divided into Moralist, Individualist, and Traditionalist and will affect the educational expenditure level in a nation (Sharkansky 1969).

I. Political Independence & Educational Expenditures

The attainment of independence and the transfer of power in former colonies, provides the opportunity for indigenous successor elites to make fundamental changes in the educational system. Besides the expansion of educational facilities and student enrollments already considered, is the expansion in the proportion of the national budget allocated to education. Cowan in his book on education in Africa, remarks how one of their most insistent demands was that the colonial adminstrators devote a much larger percentage of government funds to mass education. No matter how much the administration had done for education prior to the advent of autonomous national government, when the African leaders came to power they pressed for more.

Proposition

Independence produces a significant increase in national educational expenditures and this increase has been greater in nations achieving independence in the post World War II period as opposed to those in the period before World War II because of the diffusion of a growing stress on the importance of an educated population in the world culture in the latter period.

J. National Socio-cultural Attributes & Educational Expenditures

The greater the costs of communication within a nation, the higher the cost of a standard unit of education in a nation (Warren 1973).

The higher the level of heterogeneity in a nation, the higher the cost will be of a standard unit of education in a nation (Warren 1973).

Finance Arrangements & Patterns

Educational expenditures are one dimension of the patterns of schools finance which can be examined through a cross-national perspective to test convergence theory. Educational expenditures can be interpreted as the policy

outcomes of the finance arrangements within the nation's educational subsystem. The finance arrangements are the organization, political, and technical components of school finance. Finance arrangements manifest considerably more variation cross-nationally.

Joel Sherman (1978) described a list of factors which investigators should consider when studying school finance arrangements at the primary level, though they are largely applicable to all levels, and they are the following:

1) The historical context of primary, or the particular level, school finance,
2) The sources of revenue and methods of revenue production.
3) The methods of financing specific functions, e.g. teacher salaries, capital costs,
4) Intergovernmental transfers: their nature, purpose, and criteria for allocation,
5) Proposed changes in the finance structure,
6) Current objectives of primary education finance policy, and
7) The relationship between financial instruments and policy objectives (Sherman 1978).

Obviously, the thoroughness dictated by these considerations would require a qualitative investigation beyond the scope of this project. Instead, the decision has been made to focus upon the organizational, political, and technical components of finance arrangements which broadly reflect the complex interaction of governments, citizens, and the educational system and which broadly reflect the dimensions above.

The following set of propositions consider two basic features of finance arrangements or structures in a cross-national perspective. These features are:

1) Public versus Private organization of financing
2) Degree of centralization among the public organization for the funding responsibility or the distribution of revenue production and allocation tasks.

These features deal with organizational and political structure of the financing arrangement for schools within nations. Changes and patterns in these as well as their relationships to other factors in terms of being both independent and

and dependent variables are contained within the propositions. These two features are capable of being viewed as independent variables which have some impact on the distribution of educational revenues and resources, on the logus of decision-making, and on the character of educational services, to assess whether different finance arrangements like centralized vs. decentralized funding make a difference in policy outcomes, like educational expenditures cross-nationally and across subunits with a nation. These last points are especially relevant to the emergence of the issues of equality and efficiency in nations around the world with regard to the collection and allocation of educational funds.

K. Public vs. Private Finance Arrangements

One of the most common observations made about finance arrangements is the erosion of private sphere in the funding role of education cross-nationally, due to the trend of the increasing role of government or the public sphere.

Propositions

There is an increase, cross-nationally, in the issue of the financing of higher education and its effect on income distribution, and this is related to the taxation scheme used for supporting the public education's contribution (Jallade 1978).

The link between the financing of education and the ownership of facilities where such services are produced allows predictions about the respective role of the public and private financing to be tested:

1) Since private education is quite expensive, the more skewed the income distribution, the higher the relative amount of such private production of education services should be.
2) After a fairly low level of education has been achieved, the measurable rate of return to investment in schooling seems to fall, parelleling the falling rate of return of other types of investment when the amount invested is increased (Pryor 1968).

Hypotheses of the implications of the financing method:

1) If the elasiticity of substitution of private for public expenditures is low, then a larger share of public financing should result in the production of a greater relative amount of educational services (i.e. a higher ratio of total educational expenditures to the GNP, other factors being equal).
2) A greater public share of educational expenditures should also result in a higher proportion of pupils and students from poorer income groups.
3) There should be certain predicted relations between the financing of education and the ownership of the facilities where education is produced.

4) Differences in curricula should be related to different ways in which education is financed.
5) The way in which education is financed should be related to the theoretical motives for placing such a service in the public sector (Pryor 1968).

The public support of education by market-oriented nations, or where privately organized interests dominate most other spheres of social activity, depends upon the availability of wealth or income for this support, the expectations of the population for education, and the ability of the government to extract the wealth and its attitude toward education as an instrument in the realization of national policy. The following are some propositions based upon this statement.

As income rises, the expenditure for public education will rise (Garms 1967).

As income rises, there will be an increase in the percentage of the national income spent on education (Garms 1967).

The higher the proportion of children of school age in the population the higher will be school expenditures per capita and as a percent of the national income (Garms 1967).

Public expenditure on education per capita and the percent of national income spent on education will increase with increasing level of education of the adult population (increases the demand for higher quality) and increasing urbanization (Garms 1967).

The higher the extractive capability of the government the higher will be the expenditures per capita for education and the percent of the national income spent on education (Garms 1967).

The more the national government is mobilized and/or representational the higher should be the educational expenditures (these last two deal with the attitude of the government through its organization and its leaders toward education as an instrument of national policy) (Garms 1967).

There is trend cross-nationally, toward the increasing role of the state in financing private universities, for which Belgium is an excellent example (Geiger 1979).

Should the importance of private education increase with a rising per capita income:
1) As a community becomes wealthier the individual citizens are more able to afford private education and will more strongly desire private education which can be individually tailored to

the specific needs of the pupils.
2) On the other hand, the average unit costs of education rise over time vis-a-vis other goods and services as per capita income rises and the schooling process for the average pupil becomes longer (Pryor 1968).

The public subsidization of higher education is higher in developing nations than in developed nations (Rogers 1971).

L. Centralization of the Public Finance Arrangement & the Equality and Responsiveness of Educational Expenditures Across Nations and Sub-Units Within Nations

The degree of the centralization of the public finance arrangement reflects the distribution of funding responsiblity or the division of the tasks of revenue production among the agencies entrusted with control of the apparatus of educational revenue production, mobilization, and allocation, among the levels of the local, state or regional, and national political complex. The relationship between the degree of centralization of educational finance mobilization and funding source and the degree of centralization of the political system (decentralized/federal as opposed to a more centralized/unitary system) is high.

The distribution of funding responsibility may be associated with many events, from the degree of state strength, the degree to which political levels can be effective mobilizers and extractors, the history of education and political culture in the nation, to many more. The degree of centralization has also been related to the issues of equality and efficiency. Sherman (1978) discerned three distinct comparative approaches to equalization in education:

1) The equalization of tax bases to support education,
2) The equalization of per pupil or per capita expenditures, and
3) The equalization of physical inputs, particularly teacher services (Sherman 1978).

These have led him to formulate the following set of related questions:

1) Do schools in different regional or local jurisdictions spend different amounts per child?
2) Are these expenditure differences correlated with the income, wealth,

or socioeconomic status of the population or area?
3) Do finance instruments offset or reinforce these inequalities? (Sherman 1978).

Some of the following propositions deal with these questions in broad terms. It is hoped that in the future more information on cross-national patterns of school finance can be located to approach some of the questions above and some other interesting one like the relationship between the distribution of funding responsibility and the area of education the funds are allocated to, as well as the analysis of the emergence of different funding arrangements cross-nationally.

Propositions

If the distribution of funding responsiblity is examined by the relative burdens borne by the central, regional or state, and local political unit levels, there is a trend toward the centralization of this funding responsiblity even though considerable variability exists for the relative shares among the levels for both developed and developing countries.

Local level governments are most capable of adapting the quantity of educational spending and the character of the public school system to the demands of those directly using the schools and to business firms and individuals who will most immediately affected by the nature of the schools, consequently it would not be unreasonable to predict that:
1) The problem of the educated unemployed will be greater in those nations where financing and planning is done by non-local organizations (with little local input), and
2) The rate of adjustment of financing to local demographic shifts will be slower if financing is done by non-local organizations, and
3) Inequalities within a nation will be greater when the financing is a non-local responsibility.

We will hypothesize that the central government in communist systems, due to both a greater desire and capability to equalize, will employ fiscal transfers to achieve regional revenue equality. This equal revenue position will translate in turn, with further central prodding into equal spending on social services relative to non-communist states (Echols 1975).

Unitary systems tend to compensate for disparities in socio-economic resource base by effecting redistribution of resources to the non-industrial, non-commercial, and poorest areas. In contrast, allocations in

federal systems are non-equalizing and tend to mirror these disparities (Cameron and Hofferbert 1974). The following few propositions are based on this statement.

> Variations in educational expenditure within non-federal systems are less closely associated with sub-national disparities in socio-economic resource base size than in federal systems (Cameron and Hofferbert 1974).
>
> Federal systems allocate less to education relative to their resource base, than do unitary systems (Cameron and Hofferbert 1974).
>
> Unitary systems manifest less relative variation than do federal systems in educational expenditures across the nation's subnational jurisdictions (Cameron and Hofferbert 1974).
>
> The greater the central government's financial responsibility for education, the greater the funds expended on education in the total system, relative to the resource base of the system (Cameron and Hofferbert 1974).

The following few hypotheses are attempts to explain the differential degree of centralization of educational expenditures in various governmental units across nations.

> The greater the net emigration from certain subnational territorial units to others, the larger the share of public educational expenditures which are financed at the central level (Pryor 1968).
>
> The smaller the size of the largest subnational units, the larger the share of educational expenditures which may be financed at the central governmental level (Pryor 1968).
>
> In a federal system, the proportion of educational expenditures financed directly at the federal level should be lower, since local governments have more political autonomy and so more control over their own expenditures (Pryor 1968).
>
> The greater the inequality of income in different parts of the country the greater may be the degree of central governmental financing of education (Pryor 1968).

III. GOVERNANCE AND ADMINISTRATION IN NATIONAL EDUCATIONAL SYSTEMS: PATTERNS OF CONTROL STRUCTURES

The propositions in this section deal with patterns of lay vs. professional participation in educational decision-making, systems of coordination/control cross-nationally, state-educational system linkages, the degree of centralization of control structures, planning structures, government penetration of different forms of schooling, budget decision-making, the relationship between funding and control, and the degree of the national incorporation of education, and factors which are hypothesized, in the literature, to affect these aspects of governance and administration.

A. Lay vs. Professional Participation in Educational Decision-Making

The salience of planning for the material and intellectual development of all the levels of education has increased since the explosive growth of student numbers and costs, as well as the increasing importance of the schools as political and economic factors. At the state and national levels the organizational structures responsible for overall planning vary according to the degree of centralization and bureaucratization, the extent of integration of the different sectors and levels of education, and the concentrations of government planning authority at the central level, or its distribution between federal government and the states (Goldschmidt 1978). The increased salience of planning and the proliferation of organizational structures of control have increased the number of experts or professional in educational governance and administrative decisions. On the other hand, if education is an investment rather than a consumption then it must become a concern of those responsible for public policy. If there is growing involvement of the population in the schooling process, then, especially in democratic societies, education becomes a political issue on which parties and candidates can appeal to the electorate.

The consequence of these two situations is conflict between the lay public and the professionals.

Michael Kirst writes of how Wirt recommends an orientation to roughly the situations above, where the focus is on the tension between professional and non-professional concerns that generates political conflict found in many nations and is differentiated by contextual conditions (Kirst 1979). The focus in this orientation is to be upon factors influencing the contradictions between professional and lay concerns. First, is the proposition that there is a continuing conflict between the professional and non-professional in decisions about how policy services are to be defined, authorized, and delivered. Second is the proposition that differences in the nature of this conflict are traceable to the influence of major contextual factors existing in every society, such as:

1) Political (ideology, government structures, political practices)
2) Social or Demographic (different population mixes)
3) Economic (size and availability of economic resources) (Kirst 1979)

Kirst contends that one attribute of the modern nation-state is the presence of professionalism in both the public and private sectors. Attendent upon professionalism is the episodic involvement of non-professional groups such as clients in the decision-making of professional groups. They challenge the professionals' once accepted definitions of what needs must be met, what societal resources must be used, and how such resources should be delivered (Kirst 1979).

Propositions

Federal, as against unitary, systems better account for the prevalence of turbulence between professional and non-professional groups in educational decison-making (Kirst 1979).

Professional dominance in educational decision-making is more likely to occur in small population societies with hierarchical social structure, than in large open societies (Kirst 1979).

The presence of rich economic resource facilities professional responses to challenge by adopting incremental, or add-on changes,

rather than systematic changes (Kirst 1979).

These questions are especially relevant in light of Beattie's (1978) contention that there is a trend in Western European education, present since World War II and especially since 1960, of increasing formal participation of parental involvement in the management and control of schools. The style and extent of such involvement has of course varied from country to country: yet beyond these evident differences there seems to exist a strong sense that parental involvement is a good thing. Beattie believes this participation involves an egalitarian sentiment but the structures of parental participation seem not to be correlated with other egalitarian measures such as comprehensive forms of secondary schooling and mixed-ability groupings. But Beattie also speculates about the futility of these parental efforts because of the bureaucratization of the schools which makes them resistant to outside intrusions, and contends that many of these forms of participation are in "safe" areas where the parents' issues can be diffused.

> The higher the egalitarian sentiment in a nation, the higher the participation of parents in educational decision-making structures. (Beattie 1978)

B. Arrangements of Coordination & Control

Burton Clark has identified four different processes of coordination or patterns of control, specifically in reference to national systems of higher education, but generally applicable to the total educational system. He realizes that they are not mutually exclusive, rather he organizes his discussion of them around whether the specific process happens to be dominant, and if so what are its characteristics.

1) If bureaucratic coordination is dominant then,
   a. Layering or the increase in levels of coordination are created such that decentralized systems add new higher levels and centralized systems add intermediate levels,
   b. Jurisdictional expansion, or the expansion in scope of administrative agencies singly or in combination,

c. Personnel enlargement,
d. Administrative specialization or professionals, and
e. Rule expansion, or an increase in the number and complexity of rules designed to effect consistency in the activity of people in the system.

2) If political coordination is dominant then,
a. Increased regime and party involvement,
b. Increased corporatism, or increase in systematic, open inclusion of certain external interest groups in government decision-making
c. Increased participation, or the increase in the representation and involvement within the ranks of education,

3) If professional coordination dominant then,
a. Expansion of subject expertise,
b. Expansion of central collegial bodies, and
c. Expansion of faculty interest organizations, or the increase in strength and comprehensive faculty bodies, unions and associations with newer national forms.

4) If market coordination is dominant then,
a. Increased consumer sovereignty,
b. Creeping institutional markets, or the decentralization of operating authority to institutional level, and
c. The extension of power markets, or increase in the market of power relations within the confines of state authority, bureaus balkanize around specific domains and clients, and resist efforts to pull them together (B. Clark 1978).

The dominant form of coordination and control in a national educational system, especially at the tertiary level, is determined by the complex task structures within the system which as a centrifugal force and the prevailing structure of embedded power in the society (B. Clark 1978). The increased horizontal and vertical differentiation of the educational system in the post-war period raised a corresponding problem of coordination, for which one possible response was the increased centralization of control structures of educational systems because it provided a form of control more conducive to more extraction, coordination, and utilization of resources nation-wide. Because of the common problem of coordination, have there been common responses around the world?

Since World War II there has been a general shift from loose arrangements for administration and control structures of educational systems to tighter more inclusive formal structures. Education has become increasingly formalized and is organized in large bureaucracies

managed by political systems, rather than a matter of exchange between families and local educational organizations (Meyer and Rowan 1978). The educational system is very much the creature of the polity. It depends upon the polity for its funds, for a specification of kinds and levels of training, and frequently, for its policies. It must respond to politically generated demands for its services whether such demands originate among the masses or reflect the ideological presuppositions of the governing elites (Coleman 1965). A review of the process of decision-making in various policy areas over the past three decades demonstrates in almost every case a shift of power from lower to higher levels, the role of government whether national or state/regional becomes more important, more bureaucratic administrative growth, and simultaneously a contrary trend toward delegation of responsibility for detailed decisions and implementations to lower level, with more junior staff and lay persons involved (Goldschmidt 1978).

Proposition

> The greater the structural differentiation of a national system of higher education, the greater the problems of coordination and control and possibly consequently, the greater the size of the administrative control structures (B. Clark 1978).

Many investigators support the contention that the post-war era has seen the increased involvement of the political system in the governance functions and the bureaucratization of educational administration.

C. Bureaucratization & Its Consequences

Meyer and Rowan (1978) argue that as nations develop, education increasingly takes place in large-scale public bureaucracies. Educational bureaucracies present themselves not as units servicing education but as organizations that embody educational purposes in their collective structures. They proceed to argue that modern schools produce education

for society, and the growth of corporate control of education has major implications for educational organizations. As citizens personnel are increasingly sorted and allocated to positions in the society on the basis of classified or certified educational properties, the ritual classifications of education come to have substantial value in the societal identity market. As societies and nation-states use education to define their basic categories of personnel, a large-scale educational bureaucracy emerges to standardize and manage the production of these categories. In most societies the state controls systems of inspection or examination that manage the categories by controlling either the output or the instructional procedure, except where localism and decentralization in terms of values and arrangements inhibit the exertion of those controls.

Meyer and Rowan (1978) observe that it is customary to suppose that as the scale of these activities expands, higher levels of coordination and control are required and that bureaucratic controls emerge to structure these activities efficiently, but in some nations like the U.S., this does not fit educational organizations because they lack close internal coordination, especially of the content and methods of what is the main activity of instruction. Instruction is removed from the control of the organizational structure, in both its bureaucratic and collegial aspects. The structure is disconnected from the technical work activity, and the activity if disconnected from its effects (i.e. loose-coupling). The following two propositions focus on the variability of bureaucratization and its consequence of loose-coupling.

Propositions

The formal structure of educational organizations tends to come into correspondence with environmental categories. These ritual categories tend to be linked to the nation-state, implying that formal educational structure ought to vary more between societies than within them. Educational content and instruction is organiza-

> tionally most loosely coupled in societies with pluralistic systems of control (Meyer and Rowan 1978).
>
> The more education is a national institution of central importance, the more loosely coupled its internal structure, and the more control rests on the logics of confidence and of professionalization (Meyer and Rowan 1978).

Burton Clark (1978) identified the possible existence of another pattern of coordination and control besides that of bureaucracy, interorganizational forces. In nations characterized by decentralized control, major changes can be discerned which pressure the decentralization to accommodate modern social forces, particularly to the concerns that are national in scope and are defined by federal agencies and private national bodies. There is some shift upward in the formal locus of educational decision-making from the local to state level in public education. But much of the change taking place is in arrangements that lie outside the hierarchy of public offices. The emerging patterns depend on voluntary relations among public agencies and private groups. These arrangements serve as substitutes, for to a degree or as alternatives to formal internal administration, that is to the national state-local line of ministerial authority found in many nations. These interorganizational patterns are the results of efforts to coordinate autonomous agencies, but they are somewhat different in that they develop away from political arenas and often escape the constraints of political accountability.

D. National Economic Attributes & the National Incorporation of Education

The national incorporation of education relates to the general concern of state-educational system linkages since it characterizes how modern nation-states regulate and control educational systems directly. National incorporation has been discussed in earlier sections where it was used as an explanation for demographic changes in educational systems. Here it is used as the dependent variable.

Propositions

The greater the degree of economic modernization, the lower the degree of incorporation of educational system into the political system (Ramirez and Rubinson 1979).

The higher the economic development of a nation the lower the national incorporation of education. (More industrialized and differentiated nation-states probably have greater technological and organizational resources with which to establish and maintain close ties between the nation-state and the primary education system, but fail to do so. Perhaps in more developed and differentiated societies, institutional structures acquire a greater degree of functional autonomy, thereby decreasing the likelihood of national incorporation strategies including those directly affecting education. (Ramirez 1974).

Insofar as university systems are more likely than primary schools to demand and attend autonomy, economic development should show larger negative effects with the incorporation of higher education (Ramirez 1974).

E. National Political Attributes & the National Incorporation of Education

State-formation leads to the increasing institutional connectivity between state and education (i.e. increases in the political incorporation of education) (Rubinson 1974).

The legitimacy crises created by the extension of citizenship lead to educational system becoming increasingly politically incorporated by the state (Rubinson 1974).

At higher levels of state authority and power, a country is more likely to nationally incorporate the structure of education by locating educational institutions within a network of national rules and resources (Ramirez and Rubinson 1979).

Higher levels of state authority and power lead to higher levels of one specific structural feature of educational systems, the

political incorporation of education or the extent to which educational institutions are organized by rules whereby the state controls different dimensions of education (e.g. curriculum, funding, admission, etc.) (Ramirez and Rubinson 1979).

The greater the penetration of constituent interests into the state apparatus, the greater should education become politically incorporated (Rubinson 1974).

The more corporate a society, the greater the increase in the national incorporation of primary education (Ramirez 1974).

The more power is concentrated in a branch of government the greater the score of a nation on the national incorporation of primary education scale (Ramirez 1974).

The fewer the number of political parties the greater the score of a nation on the national incorporation of primary education scale (Ramirez 1974).

The more power is concentrated in a branch of government the greater the score of a nation on the national incorporation of higher education scale (Ramirez 1974).

The fewer the number of political parties the greater the score of a nation on the national incorporation of higher education scale (Ramirez 1974).

The adjusted enrollment ratio and the degree of the political incorporation of education are independent (Ramirez and Rubinson 1979).

F. National Socio-cultural Attributes & the National Incorporation of Education

The more corporate a society, the greater the increase in the national incorporation of higher education (Ramirez 1974).

More modern and differentiated societies produce more functionally autonomous university systems, and so, negatively affect higher educational incorporation (Ramirez 1974).

The greater the ethnic diversity in a nation the lower the political incorporation of education (Ramirez and Rubinson 1979).

G. Centralization in Control Patterns

Centralization in arrangements of governance and administration has already been mentioned in reference to the discussion about bureaucratization and the national incorporation of education. The degee of centralization reflects the relative distribution of power between the political levels where the organization of control are located. Two modes of studying this centralization are the determination of the level which delivers the major functional activities of education, and the distribution of public personnel between the levels modified by the relative labor-intensity of educational services rendered by the levels (Stephens 1960). Another way to conceptualize patterns of school centralism is by the degree to which the vertical axis is penetrating into the peripheral systems within the nation (Wirt 1978b). The vertical axis centralizes decision-making within education and consequently, the withdrawal of decisional prerogatives from peripheral groups.

Centralization in control patterns reflects the increasing articulation of the state-educational system linkages and the expropriation of governance and administrative duties by higher level governmental units. Goldschmidt (1978), when analyzing the higher educational systems in seven industrialized nations found increased governmental control in terms of determining enrollment capacities and access and admission, curriculum and exams, academic appointments, and research. Others have made the observations that as societies modernize the distinction between public and private schools is eroded because of government financing subsidization of private schools and because of states' increasing control of them (Levy 1977). National state officials move toward dominance of the educational system within the nation through ministerial control over the location and expansion of facilities, segmental budgeting, administrative staffing of

coordinating bodies, and legislative program evaluation (B. Clark 1978).

The above represent an attempt to conceptualize centralization in control patterns and to illustrate characteristics of that development.

Propositions

School centralism (conceptualized as a value here) is more highly related to region than environmental variables like economic and political characteristics. (Region subsumes not merely geographical matters, but quintessential sets of area-bound decisions made at earlier times in response to dominant values which resulted in a "policy culture", i.e. distinctive, interrelated set of beliefs about the way the political system should allocate values and resources) (Wirt 1978b).

The higher the modernization of a nation, the more likely the form by which authority is exercised in the educational system is a high elasticity of control (i.e. the interference of a disciplinary or compulsory sort on the part of a central government is potentially possible but actually rare, while varying forms and degrees of supervison and guidance are common, and this is opposed to low elasticity of control in developing nations or where political control does not readily increase or decrease in reaction to needs; this conceptualization focuses on local-central relations and general relations among officials) (Werlin 1970).

The greater the size and significance of the higher education system in the society, the greater the linkages between higher education and the nation-state (Ramirez 1974).

H. Centralized Control Patterns & Consequences

Under conditions of expanded state organization, there should be less within nation variation in educational organization (Ramirez 1974).

Countries with centralized system of educational administration seem to be less hospitable to new educational movements than those where the administration is decentralized (Cramer and Browne 1965).

The greater the control by the government in a nation (or some central agency) of the number and subject area of scholarships, the greater the social returns from education and the less the problem of the educated unemployed (Rogers 1971).

I. Governance Centralization & Administrative Centralization

The degree of centralization of governance control structures of educational systems is independent of the degree of centralization of the administrative control structures of the educational system in a nation (this could be thought of as authority or responsibility structures vs. daily control structures), and then might produce four ideal combinations:
1) Strong local responsibility and decentralized control,
2) Strong national or state control-centralization,

3) Responsibility divided between national and local units, and
4) National control of policy, but decentralization of administrative details (Cramer and Browne 1965),

J. Planning Structures of Educational Systems & the Degree of Centralization of Governance and Administration Control Structures

The pattern of educational planning within a nation is related to the degree of centralization of the governance and administration control structures and/or the degree of centralization of the distribution of funding responsibility in the nation for education. (The patterns of educational planning are defined by the characteristics of the body(s) responsible for the planning, the legal circumstances under which implementation is taking place, and the characteristics of plans regarding time, comprehensiveness, and linkages to over-all national plans) (Inbar 1973).

K. Degrees of Governmental Control Penetration & Types of Schooling

Institutions within national systems of higher education differ to the extent to which they are penetrated by governmental control, such that vocational and teacher training are penetrated more than the university, as an example (OECD 1974).

L. Budget Decision-making

Most of the funds available to the schools under various budgetary categories are earmarked for relatively routine, continuing tasks, i.e. a significant amount of inertia exists which limits dramatic changes. The budgetary decision-making process usually focuses on marginal, temporary or one-time expenditures. This situation increases the importance of supplementary funds.

(Appropriate for both state and non-state organized systems of higher education). The more the higher educational system consists of legally independent corporations and is open to market forces, the more supplementary funds from external sources can serve as instruments of interventionist policies for control (Goldschmidt 1978).

M. Fiscal-Control Linkage

The relationship between the financing source and source of control has been the preoccupation of many investigators. One of the most common ways of measuring the centralization of power is to study what level has the financial responsibility for education. An important

question is the specification of the relationship between the two. In order to study how finance centralization relates to patterns of control centralization, one would need to know whether decisions about finance were made either before or after changes in the political determination of finance arrangements (Sherman 1978). The fiscal-control linkage concerns not only the relationship between control structures and the distribution of funding responsibility but also the interaction between control and finance arrangements. Factors which shape the interaction between finance and control are environmental properties like economic characteristics, party competition, political culture, and centralism in other national activities, as well as the availability of national revenues (Wirt 1978b).

Propositions

Higher central government funding of educational costs is not consistently associated with greater central control of educational decision-making (Sherman 1978).

Higher central funding is not associated with a more standardized, uniform structure of schooling (Sherman 1978).

N. The Degree of Centralization of Funding and Control & Structural Consequences for Education

Meyer (1979) has developed a set of propositions covering different combinations of levels of centralization of finance and control which can represent particular nations today, or conditions which may characterize national educational systems in the future, and potential developments or properties of structural features of educational organizations. The starting point for his propositions is the case of America, but they are easily generalizable to cross-national examination.

Propositions

Centralized Funding & Control:
Complete centralization of funding and control in American education in the hands of an integrated federal authority would reduce the size of the administrative component at each lower level (Meyer 1979).

Complete centralization would increase authority and hierarchial relations throughout the system, and would decrease the organizational extent and importance of lateral relations (Meyer 1979).

Complete centralization would lower the number and complexity of environmental relations for each level, and would therefore lower (independent of size) the organizational differentiation or complexity found at each level (Meyer 1979).

Complete centralization would increase vertical integration (Through inspection and evaluation) and the horizontal integration of each level (Through authoritative adminstrative coordination) (Meyer 1979).

Centralized Authority and Partially Decentralized Funding
The centralization of authority but not funds increased the decoupling of authority and actual practice. Practice is organized in varying ways, depending on funds, but is integrated in a common categorical scheme built up by the centralized authority (Meyer 1979).

Centralized Funding but Decentralized Authority
The centralization of funding but not authority generates organizational controls through accounting and statistical mechanisms, and administrative work is deflected from policy and authority and toward accounting systems (Meyer 1979).

Decentralized Authority and Funding
Administrative size and complexity will expand in subunits as those subunits are exposed to an increasing variety of funding and authority relations with their environments (Meyer 1979). Given the progression of educational decoupling:

1) Subunit horizontal integraton and internal coordination will decline with an increased variety of distinct funding and authority relations with the environment.
2) Subunit organization will shift in structure from forms designed to coordinate work to those differentiated to match the environmental funding structure.
3) Faced with diverse external authorities and funding sources, subunits organize around reporting requirements and lose their more general capacity to exercise authority over their subordinate levels.
4) Vertical and horizontal loose-coupling is increased as environmental groups and funding agencies pose conflicting and inconsistent requirements (Meyer 1979).

Fragmented Centralization (i.e. disconnected centralized control)
Fragmented centralization does not, overall, tend to increase conflict and reduce satisfaction in the organization system (Meyer 1979).

Fragmented federal centralization decreases the power and satisfaction of those constituencies organized primarily at lower levels of the system (i.e. parents and communities ability to penetrate the organization), but may increase the power and

satisfaction of those constituencies that can mobilize at the federal level (Meyer 1979).

Fragmented federal centralization increases the inclination of constituencies to mobilize at the federal level (Meyer 1979).

Section III has been a review of some of the orientations and propositions which exist in the literature through which one can approach the topic of patterns of school governance and administration in a cross-national mode. Many important areas like characteristic patterns of press and public criticism of schooling, the development and influence of special interest organizations of educators, and aspects of the legal structure in the nation are being investigated for possibilities because of their significance for control structures of educational systems. Another possible area of focus, because the dominant control forces in a nation's educational system can clearly be observed as well as because of its relationship to other major themes in this paper, is pre-primary schooling.

IV. STRUCTURAL & NORMATIVE CHARACTERISTICS OF EDUCATIONAL SYSTEMS

Several structural features have already been considered, here will be considered the features of structural differentiation and segmentation of educational systems as phenomena to be explained. The following propositions will also deal with dynamic or normative characteristics of schooling cross-nationally. These normative characteristics may be divided into problems or issues which have emerged cross-nationally, (and as such argue against particularistic interpretations of educational conflicts and problems), rules and institutionalized practices and procedures, and patterns of change in educational systems cross-nationally.

A. Structural Differentiation & Segmentaiton

Structural differentiatiton in national systems of education is defined as the multiplicaiton of at least one structural or organizational arrangement into two or more. The structural differentiation of any one country's system of education is subject to the particulars of time of origin and institutional context in that country. But the level of structural differentiation at any point in time, is a good index of the ability of a system to further adapt. The more diversified and specialized are the institutions of a society, the more information they can handle (Farrell 1968). Furthermore, Farrell contends, there is a discernable order to structural differentiation.

Propositions

If one examines the structural differentiation within the secondary and the tertiary levels, and the system as a whole, then levels of differentiation within should vary together positively (Farrell 1968).

The structural differentiation of a national educational system at time 1 is highly related and predictive of the differentiation of it at time 2 (Farrell 1968).

Structural differentiation and change in national systems of education is less where effectiveness is higher, where there is a lack of competition from other forms, and where the vested interest is high (B. Clark 1978).

The greater the division of labor, differentiation, and specialization in the economic, political, and cultural organizations and institutions in a society, the greater the DOL, vertical and horizontal differentiation in national systems of higher education (B. Clark 1978).

If the population of student age-groups increase, then the structural differentiation of the educational system will increase if there are strong communicative links between elements (Farrell 1968).

Structural differentiation or institutional educational development is positively related to industrialization, urbanization, political modernization, high communicability, modern transportation infrastructure, and educational variables which measure expansion (Adams and Farrell 1967).

Structural differentiation will relate less highly to urbanization than to communicability (Farrell 1968).

The levels of structural differentiation within a nation's educational system is similar to the levels of differentiation within nations in the same region (Farrell 1968).

Structural differentiation occurs within the context of the administration and governance structures of national educational systems in a chronological manner (Adams and Farrell 1967).

The structural differentiation of an educational system is related to its segmentation (i.e. the multiplication of one structural element), but they are not identical (Farrell 1968).

If the population of student age-groups increases, then segmentation of structures in a nation's educational system should increase (Farrell 1968).

B. Curriculum Patterns & Transformations

Curricula is becoming more alike the world over (Coleman 1965).

In terms of the subject matter and the distribution of study time across subjects and the organization of the subject areas, similarities continue to emerge.

Propositions

The subject matter and the distribution of schooling-time across

the subjects are experiencing convergence cross-nationally.

As a nation develops its educational system, it tends to make its curriculum more child-oriented and less subject-oriented (OECD 1974).

As a nation's educational system develops there are concurrent changes in curriculum in terms of the percent of schooling-time devoted to them relative to earlier periods of time and the specific nature of their content and orientation (e.g. more personal development which requires more student-teacher interaction, etc.) (Sanders 1962).

The achievement of independence by a country is followed in the post-colonial period by a trend in educational development in curriculum revision of which there are three aspects;

1) A move toward greater practicality,
2) Increased indigenization-nationalism, and
3) Increased politicization (Though this is conditional upon the presence of a mobilizational system or revoluntionary-centralizing regime in the country).

These hypothesized transformations are conditioned upon whether the new nation continues to depend on the metropolitian country, for example teacher supply, in which cases it hinders these transformations of the curriculum (Coleman 1965).

A post-colonial phenomenon is the pressure for the secularization of both the structure and the content of education, often involving the monopoly of the state over education. The impulse for secularization varies according to the character and the strength of traditional educational systems, the degree of penetration and control of the educational system by foreign missionary enterprise, and the strength of the commitment to secularism or ideological purity on the part of the new state builders (Coleman 1965).

C. The Problem of the Unemployed Educated

Education besides being an industry with employees and an activity which generates demands for goods and services (a creator of employment), also is a generator of employable and unemployable individuals (Harbison and Myers 1964). The irony of the unemployed educated is often associated with the problem of credential inflation and seems to have emerged in the post World War II period. Randall Collins (1979) contends, on the other hand, that the current problem of the educated unemployed is simply the reemergence of an old problem. The following propositions illustrate relationships between the unemployed educated and other societal factors.

Propositions

Social demand for education has the tendency to grow faster than the manpower requirements of a nation and this produces the educated unemployed (Coombs 1969).

The problem of the unemployed educated elite is generated by an educational system which has outstripped the political and economic sectors of society. This would follow the general causation pattern where educational expansion produces economic development and political development but:

1) It is possible that this unemployed elite has been educated in the metropolitan country of a colony or former colony or in some other relatively well developed nation, and thus does not reflect the state of development of the educational system of that country, or
2) It is possible that both economic and political development and the educational system are still at relatively low levels (Roth 1979).

The greater the control by the government in a nation (or some central agency) of the number and subject area of scholarships, the greater the social returns from education and the less the problem of the educated unemployed (Rogers 1971).

The problem of the unemployed school leavers is greater after a nation gains independence and initially expands its educational system (Coleman 1965).

The greater the problem of unemployment for graduates of university higher education, the greater the growth of enrollments in the non-university technical higher education sector (Geiger 1972).

The gap that exists between what types of degree-holders educational systems are producing and what types their environments need are related to:

1) People, although wanting education, may not necessarily be wanting education that fits national development needs,
2) Job preferences dictated by a prestige-carrying hierarchy of jobs of the past and this may be in conflict with present national needs, and
3) The gap is larger (or the problem of the unemployed educated is greater) in nations where:
   a) The decision concerning what speciality is left up to the student and no quotas and limitations exist on the numbers in certain areas, or
   b) Student assignment is done on a central and national level such that the fit between the pursuits of the students and the need of local environments is not responsive to them (Coombs 1970).

(Collins speaks mainly of the phenomenon of credential inflation though one of its manifestations is the problem of the unemployed educated, so to that extent the following are proposed to be related to the problem also.) The main dynamic in credential inflation is in the largest sense political. Expansion and declines alike of educational credential systems consist in the production of

culture and its investment in political power, which in turn may bring an economic payoff to persons who hold cultural credentials and to the institutions that produce them. The credential system will expand smoothly as long as the subsequent political and economic links in the chain are successfully negotiated. Several points exist where the chain can become unbalanced:

1) By conditions that overproduce credentials,
2) Political investments that disperse or destroy power rather than consolidate it, and
3) Disproportionate pressure by the political sector as a whole on the productive economy (Collins 1979).

D. Teachers & Professionalization

The very large and rapid changes of enrollment characteristic of recent times, place great burdens on school systems; buildings and equipment must be used more intensively and more places built or improvised; teachers work harder and additional teachers must be recruited, and with minimum qualifications. But to a large extent, the universal expansion of education has been achieved because the standardized categories of teachers, students, and curricular topics give meaning and definition to the internal activities of the school (Meyer and Rowan 1978). Teacher supply, standardization, and professionalization represent dynamic or normative developments in education.

Propositions

The supply of teachers within a nation is affected by:

1) Higher benefits lead to a greater supply thus aiding recruitment if competing types of employment don't offer more favorable terms,
2) The wide spread in teacher salaries between different levels of qualification provides an incentive for people to work their way up if they have ready access to good in-service training and if a reasonable chance exists for promotion from one educational echelon to the next,
3) The teacher salary structure militates against solving shortages and produces over-supplies because some subjects are more easily filled than others when uniform pay across disciplines exists,
4) Geographical advantages and disadvantages, and
5) Monetary constraints, since education is so labor-intensive and teachers are the major cost (Coombs 1969).

The higher a country's level of economic development, the more can a nation afford to make its teachers have longer periods of

training, well-furnished classrooms, lavish equipment, and auxillary services like health, guidance, and specialized subjects (Passow et. al. 1976).

The productivity of teachers has not kept pace with the rise in productivity of other sectors of the economy (Pryor 1968).

The increased standardization and professionalization of teachers cross-nationally is a consequence of their diffusion through a world culture and their institutionalization in the legal and normative rules of the nation (Meyer and Rowan 1979).

E. The Issue of Equality in Education

The spread and spreading of schools within a nation, the ecology of schooling, is not a random process, since its incidence is correlated with other sets of socio-economic variables. A result is the differentiated access of individuals to education (Foster 1977). The realization of such facts has led to the emergence of equality as an issue in education. The issue of equality poses problems for every nation. In formulating educational policy, every society must compromise among the goals of:

1) Efficiency in allocating training and individuals most likely to profit from it,
2) Equality in opening opportunities for education impartially to various groups, and
3) Free choice of educational careers to maximize motivation and flexibility (Piper and Cole 1964).

The problem of equality has been highlighted many times in reference to newly independent nations where an aspect of the colonial legacy may be the uneven acquisition of education by different ethnic or status groups, or in different regions of a country, during the colonial era, but even in more developed nations the issue has gained greater salience. Equality concerns have focused both on the opportunity to enter the educational system and to continue in and finish the system's agenda. An example of this is the implementation of comprehensive secondary schools cross-nationally. They have had the consequences of increasing the extent

to which the schools have tended to equalize resources devoted to secondary education among children drawn from different backgrounds and the extent to which they have tended to equalize the completion of secondary school and access to post-secondary education among kids with different backgrounds (Ringer 1979). Still social origins remains a significant factor in individuals' schooling biographies as an investigation which found that the percent of the variance in academic achievement that was explained by before-school social factors increased in fairly linear fashion with the level of educational and economic development of nations seems to suggest (Foster 1977).

Propositions

The less the salience and presence of egalitarian political policies, the greater the malintegrative effects of education in the modernization process because it perpetuates the elite-mass gap and perpetuates and even intensifies divisions among different ethnic, regional, and parochial groups (these malintegrative consequences can occur because groups or areas that are already more developed have an inherent advantage over those that are less developed, and the process of uneven development tends to continue according to its own logic and dynamic unless countervailing influences exist) (Coleman 1965).

The less the vertical segmentation in an educational system (i.e. tracking by social class), the greater the horizontal segmentation (not by class expansion of levels) in the educational system (Ringer 1979).

The more developed or modernized a nation's educational system the later the timing of selection of students into tracks or terminal streams, the more allowable paths to higher education, and the greater the number of subject fields.

As educational systems develop and the country modernizes, the selection point of students is postponed (OECD 1974).

F. Formal & Informal Education

If a nation has a highly developed formal educational system, then they also have a highly developed or developing informal educational system (recurrent education, links to job training, pre-primary etc.).

Conclusion

The preceding lengthy review and propositional inventory represent a critical phase of the ongoing program of research. Its purpose has been to organize the existing literature for purposes of foundation construction and research opportunity identification. Only a minor proportion of the propositions have explicitly been stated in terms derived from convergence theory, rather than alternative theories of educational development, but propositions have been listed which are interpretable through the perspective described within and characteristics of the institutional subsystem of education have been described which demonstrate definite practical research potential when utilizing the convergence perspective.

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